



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,746	04/09/2004	Erhard Bracher	32478-202238	8803
26694	7590	06/08/2006	EXAMINER	
VENABLE LLP			MILLER, ROSE MARY	
P.O. BOX 34385			ART UNIT	
WASHINGTON, DC 20045-9998			PAPER NUMBER	
			2856	

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5/2

Office Action Summary	Application No.	Applicant(s)	
	10/820,746	BRACHER ET AL.	
	Examiner	Art Unit	
	Rose M. Miller	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-9, 11 and 13-18 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11, 14, 15, 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 2-5, 8, 9, 13 and 16 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 is rejected as being indefinite. Claim 16 further limits one of the alternatives for the ultrasonic head listed in Claim 14, from which it depends. However, the claim is indefinite as it fails to limit the other selection provided in Claim 14. A suggestion for correction is to qualify the claim by starting the claim with the phrase --wherein the ultrasonic head is ... -- and provide the selected ultrasonic head. This will overcome the problem presented when the opposite ultrasonic head is selected.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13, 2-3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Takada et al. (US 6,266,983 B1)**.

Takada et al. discloses a device for measuring at least one parameter of a strip in a water bath characterized in that the strip is guided with one of its flat sides essentially perpendicular across and ultrasonic head arranged in the water bath (see Figure 4) and the ultrasonic head is a stationary ultrasonic element row that extends crosswise to the longitudinal direction of the strip (see Figure 4).

With regards to claim 13, **Takada et al.** discloses the claimed invention with the exception of the strip being tested being a flat conductor cable. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the system of **Takada et al.** to test a flat conductor cable instead of the steel strip disclosed as the system of **Takada et al.**

Art Unit: 2856

et al. works equally well with any strip which can be placed in a water bath. Therefore, one of ordinary skill in the art would know that a flat conductor cable could be tested by the system of **Takada et al.** As for the limitations that the device is "for measuring at least one dimension of an extruded flat conductor cable" and "the device being located in a water bath of an extruder", these are merely intended use and provide no patentable weight. There is no recitation in the body of the claims that provide support for these intended uses.

With regards to claim 2, **Takada et al.** clearly discloses the ultrasonic head comprising and ultrasonic transducer.

With regards to claim 3, **Takada et al.** clearly discloses in Figure 4 the ultrasonic head being a pure ultrasonic transmitter to which an ultrasonic receiver is assigned on the opposite flat side of the strip under test.

With regards to claim 5, **Takada et al.** discloses the strip being guided (by the rollers) with its flat side across the ultrasonic head either making contact with it or being at a short distance thereto (see Figure 4).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Takada et al.** as applied to claims 13 above, and further in view of **Ichikawa et al. (US 4,893,510)**.

With regards to claim 4, **Takada et al.** discloses the claimed invention with the exception of the displaceable ultrasonic head being provided with a position sensor. **Takada et al.** discloses at column 2 lines 40-45 utilizing an ultrasonic head, which is scanned in a direction substantially at right angles to the carrying direction of the sheet with ultrasonic probes arranged in the width direction of the strip. **Ichikawa et al.** teaches moving that ultrasonic head with a scanner for the purposes of testing the moving strip. It is inherent in the use of a scanner to provide the scanner with a position sensor such that the location of any defects within the strip can be easily located. **Ichikawa et al.** teaches such at column 10 line 45. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of **Takada et al.** with the scanning ultrasonic head disclosed and including a position sensor to determine the location of the ultrasonic head as one of ordinary skill in the art would want to be able to accurately determine the location of any faults within the tested strip in order to maximize the usage of the tested strip.

Art Unit: 2856

6. Claim 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Takada et al.** as applied to claim 13 above, and further in view of **Tompos et al. (US 3,332,279)**.

With regards to claim 8, **Takada et al.** discloses the claimed invention with the exception of specifically providing an additional measuring device for detecting or measuring one side edge or both side edges of the strip under test. It is known throughout the art of ultrasonic strip testing that in order to perform a complete test of the strip, the location of the edge of the strip must first be determined. **Takada et al.** provides for this by having the array of transducers be wider than the strip being tested (see Figure 4). **Tompos et al.** discloses using an optical sensor to detect the edge of the strip being tested. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of **Takada et al.** with an additional sensor for testing the edge of the moving strip as the system of **Tompos et al.** teaches that by determining the edge of the moving strip, an indication of the location of any defects found within the moving strip can be relayed to one who can fix the problems and/or defects.

With regards to claim 9, **Takada et al.** discloses the claimed invention with the exception of the ultrasonic head being on a displaceable slide. **Tompos et al.** teaches that the use of a displaceable slide allows for one of ordinary skill in the art to test the moving strip by utilizing fewer transducers and therefore fewer connections while still covering the whole moving strip. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Takada et al.** to include the displaceable slide in the system disclosed as taught by **Tompos et al.** in order to reduce the number of ultrasonic transducers found within the ultrasonic testing head.

Allowable Subject Matter

7. Claims 11, 14-15, and 17-18 are allowed.

8. Claim 16 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Art Unit: 2856

9. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest a device for measuring at least one parameter of an extruded flat conductor cable in a water bath that follows the extruder, characterized in that, in combination with the other recited elements, the device is provided with a guiding device that comprises an interior space, is located inside the water bath and is filled with water, the guiding device being provided with a slot, the flat conductor cable being guided across the slot so as to make contact or at a short distance thereto and that the slot extends crosswise to the longitudinal direction and the ultrasonic head is arranged inside the interior space of the guiding device and transmits ultrasonic waves in the direction of the slot.

The prior art of record also fails to teach and/or suggest a method for measuring at least one dimension of extruded flat conductor cable (dimension being defined by Applicants arguments as "e.g., the wall thickness of the insulation on both sides (top and bottom), the thickness of the insulation on both ends (left and right), and the distance between adjacent conductors") in a water bath after it leaves the extruder, comprising: emitting sound waves from at least one ultrasonic head substantially perpendicular onto at least one side of the flat conductor cable; and measuring the at least one dimension based on at least one reflected ultrasonic echo; wherein the ultrasonic head is either displaceable crosswise to the longitudinal direction of the flat conductor cable or a stationary ultrasonic element row that extends across the width of the flat conductor cable.

Response to Arguments

11. Applicant's arguments filed 15 March 2006 have been fully considered but they are not persuasive.

All arguments with regards to claim 11 are moot as the previous rejections have been withdrawn and the claim indicated as being allowed.

The Arguments with regards to the rejections of claims 3-4 and 9-12 under 112, second paragraph have been overcome by Applicant's Amendments presented in the response of 15 March 2006.

Art Unit: 2856

With regards to the remainder of the claims, Applicant argues:

"The Office Action rejected claims 1-3, 5, 10, and 12 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,266,983 to Takada et al. The Examiner stated that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the system of Takada et al. to test a flat conductor cable instead of the steel strip disclosed as the system of Takada et al. works equally well with any strip which can be placed in a water bath." The Applicant respectfully traverses this rejection.

Independent claims 1 and 10 have been cancelled, without prejudice, and replaced with new independent claims 13 and 14, respectively. New independent claim 13 recites, inter alia, "[a] device for measuring at least one dimension of an extruded flat conductor cable, the device being located in a water bath downstream of an extruder, comprising: an ultrasonic head arranged in the water bath such that the flat conductor cable is guided with one of its flat sides essentially perpendicular across the ultrasonic head, the ultrasonic head being adapted to measure at least one dimension of the extruded flat conductor cable." Similarly, new independent claim 14 recites, inter alia, "[a] method for measuring at least one dimension of an extruded flat conductor cable by measuring the flat conductor cable in a water bath after it leaves an extruder, comprising:... measuring the at least one dimension based on at least one reflected ultrasonic echo."

Takada does not disclose or suggest a device or method for measuring at least one dimension of an extruded flat conductor cable. Rather, Takada is directed to a flaw detecting method and an apparatus suitable for detecting flaws in a steel sheet. (See, e.g., Takada at 1:9-16; 6:16-20.) One of ordinary skill in the art would not be motivated to use the flaw detecting apparatus of Takada to measure an extruded flat conductor cable. Moreover, the Applicant respectfully submits that the flaw detecting apparatus of Takada could not be used to measure the dimensions of an extruded flat conductor cable (e.g., the wall thickness of the insulation on both sides (top and bottom), the thickness of the insulation on both ends (left and right), and the distance between adjacent conductors).

In addition, Takada is non-analogous prior art to the claimed invention. In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned. In re Oetiker, 977 F.2d 1443, 1446 (Fed. Cir. 1992). Takada is directed to flaw detection in steel strips, which is a different field of endeavor from the present invention. In addition, Takada is not reasonably pertinent to measuring dimensions of an extruded flat conductor cable. Measuring dimensions of an extruded flat conductor cable involves much more precision than is required for simple flaw detection.

For the above reasons, the Applicant respectfully requests that this rejection be withdrawn.

Claims 4 and 11 stand rejected under 35 U.S.C. § 103 as being unpatentable over Takada in view of U.S. Patent No. 4,893,510 to Ichikawa et al. Claims 4 and 11 depend from claims 13 and 14, respectively, which, as demonstrated above, are patentable over Takada. Ichikawa, like Takada, does not disclose or suggest a device or method for measuring dimensions of an object. Rather, Ichikawa is directed to an apparatus for measuring the distribution of crystal grains in a metal sheet. (See, e.g., Ichikawa at 1:8-17.) Therefore, Ichikawa does not remedy the deficiencies of Takada. Accordingly, the Applicant respectfully requests that this rejection be withdrawn.

Claims 8-9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Takada in view of U.S. Patent No. 3,332,279 to Tompos et al. Claims 8 and 9 depend from claim 13, which, as demonstrated above, is patentable over Takada. Tompos, like Takada, does not disclose or suggest a device or method for measuring dimensions of an object. Rather, Tompos is directed to an apparatus for measuring the moisture content of paper. (See, e.g., Tompos at 1:15-42.) Therefore, Tompos does not remedy the deficiencies of Takada. Accordingly, the Applicant respectfully requests that this rejection be withdrawn."

Applicant has two recurring arguments in the arguments above. The first is that Takada et al. fails to and cannot be utilized to determine the "dimensions" of a flat conductor cable. For those claims still being rejected above, claims 13, 2-5, and 8-9, Applicant has merely placed the determination of a "at least one dimension of an extruded flat conductor cable" in the preamble of the claims. There is no support in the body of the apparatus claims of claims 13, 2-5, and 8-9 to support such use of the claimed apparatus. Therefore, the determination of "at least one dimension" is merely an intended use for the apparatus claimed and is not given any patentable weight. Therefore, the apparatus of Takada et al. meets the requirement of the claimed apparatus.

Applicant's second argument is that Takada et al. is non-analogous art. As indicated by Applicant, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Takada et al. is relevant as it teaches ultrasonic inspection of a continuous strip test object in a water bath, this shape being that of Applicant's own test object. One of ordinary skill in the art would investigate those areas of ultrasonic measuring and testing which allow for testing of long, continuous test objects. As Applicant has claimed such an apparatus, the invention of Takada et al. is relevant and pertinent to Applicant's claimed apparatus. However, as Takada et al. does not teach measuring "at least one dimension" of the test object, the rejection of Applicant's claimed method has been withdrawn and those claims indicated as being allowed.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M. Miller whose telephone number is 571-272-2199. The examiner can normally be reached on Monday - Friday, 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

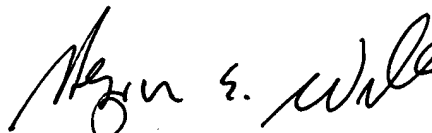
Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RMM

28 May 2006



HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800